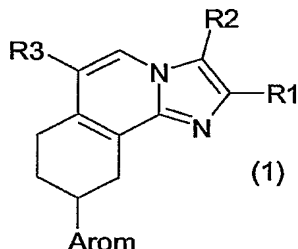


Claims

1. A compound of the formula 1



in which

R1 is hydrogen, 1-4C-alkyl, 3-7C-cycloalkyl, 1-4C-alkoxy-1-4C-alkyl or 1-4C-alkoxycarbonyl, 2-4C-alkenyl, 2-4C-alkinyl, fluoro-1-4C-alkyl or hydroxy-1-4C-alkyl

R2 is hydrogen, 1-4C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkyl-1-4C-alkyl, halogen, 2-4C-alkenyl, 2-4C-alkynyl, hydroxy-1-4C-alkyl, hydroxy-3-4-C-alkenyl, hydroxy-3-4C-alkinyl, 1-4C-alkoxycarbonyl, fluoro-1-4C-alkyl, cyanomethyl, hydroxy, 1-4C-alkoxy, amino, mono- or di-1-4C-alkylamino, 1-4C-alkylcarbonylamino, 1-4C-alkoxycarbonylamino, carboxyl, mono- or di-1-4C-alkylamino-1-4C-alkyl, 1-4C-alkylcarbonyl, 2-4C-alkenylcarbonyl, 2-4C-alkinylcarbonyl or the radical $-\text{CO}-\text{NR}_{21}\text{R}_{22}$,

where

R21 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl and

R22 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl,

or where

R21 and R22 together and including the nitrogen atom to which they are attached form a pyrrolidino, piperidino, morpholino, aziridino or azetidino radical.

R3 is hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkoxy-1-4C-alkyl, carboxyl, 1-4-C-alkoxycarbonyl or the radical $-\text{CO}-\text{NR}_{31}\text{R}_{32}$,

where

R31 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl and

R32 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl,

or where

R31 and R32 together and including the nitrogen atom to which they are attached are a pyrrolidino, piperidino, morpholino, aziridino or azetidino radical,

Arom is a R4-, R5-, R6- and R7- substituted mono- or bicyclic aromatic radical selected from the group consisting of phenyl, naphthyl, pyrrolyl, pyrazolyl, imidazolyl, 1,2,3-triazolyl, indolyl, benzimidazolyl, furanyl (furyl), benzofuranyl (benzofuryl), thiophenyl (thienyl), benzothiophenyl (benzothieryl), thiazolyl, isoxazolyl, pyridinyl, pyrimidinyl, quinolinyl and isoquinolinyl,

where

R4 is hydrogen, 1-4C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy, carboxyl, 1-4C-alkoxycarbonyl, carboxy-1-4C-alkyl, 1-4C-alkoxycarbonyl-1-4C-alkyl, halogen, hydroxyl, aryl, aryl-1-4C-alkyl,

aryloxy, aryl-1-4C-alkoxy, trifluoromethyl, nitro, amino, mono- or di-1-4C-alkylamino, 1-4C-alkylcarbonylamino, 1-4C-alkoxycarbonylamino, 1-4C-alkoxy-1-4C-alkoxycarbonylamino or sulfonyl,

R5 is hydrogen, 1-4C-alkyl, 1-4C-alkoxy, 1-4C-alkoxycarbonyl, halogen, trifluoromethyl or hydroxyl,

R6 is hydrogen, 1-4C-alkyl or halogen and

R7 is hydrogen, 1-4C-alkyl or halogen,

where

aryl is phenyl or substituted phenyl having one, two or three identical or different substituents from the group consisting of 1-4C-alkyl, 1-4C-alkoxy, carboxyl, 1-4C-alkoxycarbonyl, halogen, trifluoromethyl, nitro, trifluoromethoxy, hydroxyl and cyano,

and its salts.

2. A compound of the formula 1 as claimed in claim 1, in which

R1 is 1-4C-alkyl or 3-7C-cycloalkyl,

R2 is hydrogen, 1-4C-alkyl, 3-7C-cycloalkyl, halogen, 2-4C-alkenyl, 2-4C-alkynyl, hydroxy-1-4C-alkyl, 1-4C-alkoxycarbonyl, fluoro-1-4C-alkyl, cyanomethyl, carboxyl, 1-4C-alkylcarbonyl, or the radical -CO-NR21R22,

where

R21 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl and

R22 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl,

or where

R21 and R22 together and including the nitrogen atom to which they are attached form a pyrrolidino, piperidino, morpholino, aziridino or azetidino radical.

R3 is hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkoxy-1-4C-alkyl, carboxyl, 1-4C-alkoxycarbonyl or the radical -CO-NR31R32,

where

R31 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl and

R32 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl,

or where

R31 and R32 together and including the nitrogen atom to which they are attached are a pyrrolidino, piperidino, morpholino, aziridino or azetidino radical,

Arom is a R4-, R5- and R6- substituted phenyl, pyrrolyl, furanyl (furyl), thiophenyl (thienyl) or pyridinyl, where

R4 is hydrogen, 1-4C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy, 1-4C-alkoxycarbonyl, carboxy-1-4C-alkyl, halogen, hydroxyl, trifluoromethyl,

R5 is hydrogen, 1-4C-alkyl, halogen, or hydroxyl and

R6 is hydrogen or 1-4C-alkyl

and its salts.

3. A compound of the formula 1 as claimed in claim 1, in which
- R1 is 1-4C-alkyl or 3-7C-cycloalkyl,
- R2 is hydrogen, 1-4C-alkyl, 3-7C-cycloalkyl, halogen, 2-4C-alkenyl, 2-4C-alkynyl, hydroxy-1-4C-alkyl, 1-4C-alkoxycarbonyl, fluoro-1-4C-alkyl, cyanomethyl, carboxyl, 1-4C-alkylcarbonyl, or the radical -CO-NR₂₁R₂₂,
where
R₂₁ is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl and
R₂₂ is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl,
or where
R₂₁ and R₂₂ together and including the nitrogen atom to which they are attached form a pyrrolidino, piperidino, morpholino, aziridino or azetidino radical.
- R3 is hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkoxy-1-4C-alkyl, carboxyl, 1-4-C-alkoxycarbonyl or the radical -CO-NR₃₁R₃₂,
where
R₃₁ is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl and
R₃₂ is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl,
or where
R₃₁ and R₃₂ together and including the nitrogen atom to which they are attached are a pyrrolidino, piperidino, morpholino, aziridino or azetidino radical,
- Arom is a R₄-, R₅- and R₆- substituted phenyl,
where
R₄ is hydrogen, 1-4C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy, 1-4C-alkoxycarbonyl, carboxy-1-4C-alkyl, halogen, hydroxyl, trifluoromethyl,
R₅ is hydrogen, 1-4C-alkyl, halogen, or hydroxyl and
R₆ is hydrogen or 1-4C-alkyl
and its salts.
4. A compound of the formula 1 as claimed in claim 1, in which
- R1 is 1-4C-alkyl or 3-7C-cycloalkyl
- R2 is hydrogen, 1-4C-alkyl, 3-7C-cycloalkyl, halogen, 2-4C-alkenyl, 2-4C-alkynyl, hydroxy-1-4C-alkyl, 1-4C-alkoxycarbonyl, fluoro-1-4C-alkyl, cyanomethyl, carboxyl, 1-4C-alkylcarbonyl, or the radical -CO-NR₂₁R₂₂,
where
R₂₁ is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl and
R₂₂ is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl,
or where
R₂₁ and R₂₂ together and including the nitrogen atom to which they are attached form a pyrrolidino, piperidino, morpholino, aziridino or azetidino radical.
- R3 is hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkoxy-1-4C-alkyl, carboxyl, 1-4-C-alkoxycarbonyl or the radical -CO-NR₃₁R₃₂,

where

R31 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl and

R32 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl, or where

R31 and R32 together and including the nitrogen atom to which they are attached are a pyrrolidino, piperidino, morpholino, aziridino or azetidino radical,

Arom is phenyl

and its salts.

5. A compound of the formula 1 as claimed in claim 1, in which

R1 is 1-4C-alkyl or 3-7C-cycloalkyl,

R2 is hydrogen, 1-4C-alkyl, halogen or hydroxy-1-4C-alkyl,

R3 is hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkoxy-1-4C-alkyl, carboxyl, 1-4-C-alkoxycarbonyl or the radical -CO-NR31R32,

where

R31 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl and

R32 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl,

or where

R31 and R32 together and including the nitrogen atom to which they are attached are a pyrrolidino, piperidino, morpholino, aziridino or azetidino radical,

Arom is a R4-, R5- and R6- substituted phenyl, pyrrolyl, furanyl (furyl), thiophenyl (thienyl) or pyridinyl, where

R4 is hydrogen, 1-4C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy, 1-4C-alkoxycarbonyl, carboxy-1-4C-alkyl, halogen, hydroxyl, trifluoromethyl,

R5 is hydrogen, 1-4C-alkyl, halogen, or hydroxyl and

R6 is hydrogen or 1-4C-alkyl

and its salts.

6. A compound of the formula 1 as claimed in claim 1, in which

R1 is 1-4C-alkyl or 3-7C-cycloalkyl,

R2 is hydrogen, 1-4C-alkyl, halogen or hydroxy-1-4C-alkyl,

R3 is hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkoxy-1-4C-alkyl, carboxyl, 1-4-C-alkoxycarbonyl or the radical -CO-NR31R32,

where

R31 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl and

R32 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl,

or where

R31 and R32 together and including the nitrogen atom to which they are attached are a pyrrolidino, piperidino, morpholino, aziridino or azetidino radical,

Arom is a R4-, R5- and R6- substituted phenyl,

where

R4 is hydrogen, 1-4C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy, 1-4C-alkoxycarbonyl, carboxy-1-4C-alkyl, halogen, hydroxyl, trifluoromethyl,

R5 is hydrogen, 1-4C-alkyl, halogen, or hydroxyl and

R6 is hydrogen or 1-4C-alkyl

and its salts.

7. A compound of the formula 1 as claimed in claim 1, in which

R1 is 1-4C-alkyl

R2 is hydrogen, 1-4C-alkyl, halogen, hydroxy-1-4C-alkyl

R3 is hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, carboxyl, 1-4C-alkoxycarbonyl or the radical $-\text{CO}-\text{NR}_{31}\text{R}_{32}$

where

R31 is hydrogen, 1-4C-alkyl, hydroxy-1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl

R32 is hydrogen, 1-4C-alkyl

or where

R31 and R32 together and including the nitrogen atom to which they are attached form a pyrrolidino or morpholino radical

Arom is phenyl

and its salts.

8. A compound of the formula 1 as claimed in claim 1, in which

R1 is 1-4C-alkyl

R2 is hydrogen, 1-4C-alkyl, halogen, hydroxy-1-4C-alkyl

R3 is carboxyl, 1-4C-alkoxycarbonyl or the radical $-\text{CO}-\text{NR}_{31}\text{R}_{32}$

where

R31 is hydrogen, 1-4C-alkyl, hydroxy-1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl

R32 is hydrogen, 1-4C-alkyl

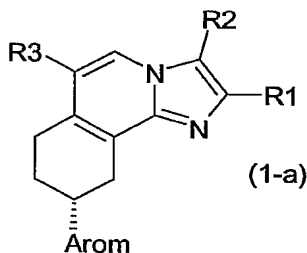
or where

R31 and R32 together and including the nitrogen atom to which they are attached form a pyrrolidino or morpholino radical

Arom is phenyl

and its salts.

9. A compound of the formula 1 as claimed in claim 1, characterized by the formula 1-a,



in which

R1 is hydrogen, 1-4C-alkyl, 3-7C-cycloalkyl, 1-4C-alkoxy-1-4C-alkyl or 1-4C-alkoxycarbonyl, 2-4C-alkenyl, 2-4C-alkinyl, fluoro-1-4C-alkyl or hydroxy-1-4C-alkyl

R2 is hydrogen, 1-4C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkyl-1-4C-alkyl, halogen, 2-4C-alkenyl, 2-4C-alkynyl, hydroxy-1-4C-alkyl, hydroxy-3-4-C-alkenyl, hydroxy-3-4C-alkinyl, 1-4C-alkoxycarbonyl, fluoro-1-4C-alkyl, cyanomethyl, hydroxy, 1-4C-alkoxy, amino, mono- or di-1-4C-alkylamino, 1-4C-alkylcarbonylamino, 1-4C-alkoxycarbonylamino, carboxyl, mono- or di-1-4C-alkylamino-1-4C-alkyl, 1-4C-alkylcarbonyl, 2-4C-alkenylcarbonyl, 2-4C-alkinylcarbonyl or the radical $-\text{CO}-\text{NR}_{21}\text{R}_{22}$,

where

R21 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl and

R22 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl,

or where

R21 and R22 together and including the nitrogen atom to which they are attached form a pyrrolidino, piperidino, morpholino, aziridino or azetidino radical.

R3 is hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkoxy-1-4C-alkyl, carboxyl, 1-4-C-alkoxycarbonyl or the radical $-\text{CO}-\text{NR}_{31}\text{R}_{32}$,

where

R31 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl and

R32 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl or 3-7C-cycloalkyl,

or where

R31 and R32 together and including the nitrogen atom to which they are attached are a pyrrolidino, piperidino, morpholino, aziridino or azetidino radical,

Arom is a R4-, R5-, R6- and R7- substituted mono- or bicyclic aromatic radical selected from the group consisting of phenyl, naphthyl, pyrrolyl, pyrazolyl, imidazolyl, 1,2,3-triazolyl, indolyl, benzimidazolyl, furanyl (furyl), benzofuranyl (benzofuryl), thiophenyl (thienyl), benzothiophenyl (benzothienyl), thiazolyl, isoxazolyl, pyridinyl, pyrimidinyl, quinolinyl and isoquinolinyl, where

R4 is hydrogen, 1-4C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy, carboxyl, 1-4C-alkoxycarbonyl, carboxy-1-4C-alkyl, 1-4C-alkoxycarbonyl-1-4C-alkyl, halogen, hydroxyl, aryl, aryl-1-4C-alkyl, aryloxy, aryl-1-4C-alkoxy, trifluoromethyl, nitro, amino, mono- or di-1-4C-alkylamino, 1-4C-

alkylcarbonylamino, 1-4C-alkoxycarbonylamino, 1-4C-alkoxy-1-4C-alkoxycarbonylamino or sulfonyl,

R5 is hydrogen, 1-4C-alkyl, 1-4C-alkoxy, 1-4C-alkoxycarbonyl, halogen, trifluoromethyl or hydroxyl,

R6 is hydrogen, 1-4C-alkyl or halogen and

R7 is hydrogen, 1-4C-alkyl or halogen,

where

aryl is phenyl or substituted phenyl having one, two or three identical or different substituents from the group consisting of 1-4C-alkyl, 1-4C-alkoxy, carboxyl, 1-4C-alkoxycarbonyl, halogen, trifluoromethyl, nitro, trifluoromethoxy, hydroxyl and cyano,

and its salts.

10. A compound of the formula 1-a as claimed in claim 9,
in which

R1 is 1-4C-alkyl

R2 is hydrogen, 1-4C-alkyl, halogen, hydroxy-1-4C-alkyl

R3 is hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, carboxyl, 1-4C-alkoxycarbonyl or the radical $-\text{CO}-\text{NR}_{31}\text{R}_{32}$

where

R31 is hydrogen, 1-4C-alkyl, hydroxy-1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl

R32 is hydrogen, 1-4C-alkyl

or where

R31 and R32 together and including the nitrogen atom to which they are attached form a pyrrolidino or morpholino radical

Arom is phenyl

and its salts.

11. A compound of the formula 1-a as claimed in claim 9,
in which

R1 is 1-4C-alkyl

R2 is hydrogen, 1-4C-alkyl, halogen, hydroxy-1-4C-alkyl

R3 is carboxyl, 1-4C-alkoxycarbonyl or the radical $-\text{CO}-\text{NR}_{31}\text{R}_{32}$

where

R31 is hydrogen, 1-4C-alkyl, hydroxy-1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl

R32 is hydrogen, 1-4C-alkyl

or where

R31 and R32 together and including the nitrogen atom to which they are attached form a pyrrolidino or morpholino radical

Arom is phenyl

and its salts.

12. A medicament comprising a compound as claimed in claim 1 and/or a pharmacologically acceptable salt thereof together with customary pharmaceutical auxiliaries and/or excipients.
13. The use of a compound as claimed in claim 1 and its pharmacologically acceptable salts for the prevention and treatment of gastrointestinal disorders.